

**ABSTRACT**

A polarization-shaped duobinary optical transmission apparatus is disclosed. The apparatus includes a light source that generates light having a continuous wave, an optical intensity modulator that converts the light into an optical intensity signal based upon an  
5 input electric signal and a differential encoder that encodes the input electric signal. The apparatus also includes a delay element that delays the encoded electric signal and a polarization-shaped modulator that polarization-modulates the signal modulated optical intensity by using the delayed signal.